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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,859	10/30/2003	Kevin J. Gildea	POU920030146US1	9769

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EXAMINER	
WANG, LIANG CHE A	

ART UNIT	PAPER NUMBER
2453	

MAIL DATE	DELIVERY MODE
11/17/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/697,859	GILDEA ET AL.	
	Examiner	Art Unit	
	Liangche A. Wang	2453	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *16 September 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *12-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 12-19 are presented for examination.
2. Claims 1-11, 20-30 are canceled.
3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/16/08 has been entered.

The New Grounds of Rejection

4. Applicant's amendment and argument with respect to claims 12-19 filed on 9/16/08 have been fully considered but they are deemed to be moot in views of the new grounds of rejection.
5. In that remarks, applicant's argues in substance:
    a. Applciant argues that the dedicated collective offload engine being implemented as a hardware device, and the office action assert that the remote computer is a hardware device. Applicant argues that the remote computer is not a hardware device in hardware only, but both hardware and software.

        In response to applicant's argument, the remote computer as disclosed by Burianek is indeed comprises both hardware and software, however, the remote computer still meets the required limitation "hardware device". In any packet and

data processing system, hardware and software are both required for the system to function.

Updated rejection is provided.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 12-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burianek et al., US Patent Number 7,082,457, hereinafter Burianek, in views of Bernardo, US Patent Number 6,766,517, hereinafter Bernardo.

8. Referring to claim 12, Burianek teaches a method of processing comprising:

   a. providing, by a dedicated collective offload engine(server 215) coupled to a switch fabric (Figure 1, WLAN 13 comprises a switch, Col 5 lines 4-10) in a distributed, parallel computing system (system 200, figure 2, resource client 235, 240, 245 are parallel to the server 215), collective processing of data from at least some processing nodes of multiple processing nodes (resource client 235, 240, 245) of the distributed, parallel computing system (Col 5 lines 58-67, server processes data received from clients), the dedicated collective offload engine being (server 215) a hardware device (Col 4 lines 20-45, server is a computer,

which is a hardware device with software) coupled to the switch fabric (Figure 1, WLAN 13 comprises a switch, Col 5 lines 4-10, clients and server are connected via WLAN), the hardware device being a specialized device to providing collective processing in hardware of data from the at least some processing nodes, the collective processing implementing a collective operation on the data from the at least some processing nodes without use of a software tree (Col 5 lines 58-67) (Col 1 line 52- Col 2 line 50, no software tree is used).

b. producing, by the dedicated collective offload engine (server 215) a result based on said collective processing (Col 5 lines 58-63); and

c. forwarding said result to at least one processing node of the multiple processing nodes (Col 5 lines 63-67).

Burianek does not explicitly teach, and Applicant indicated in remarks dated 8/29/08, there is no discussion in Burianeck of the MPI standard, or a collective opeartion implemented within the standard to teach a dispatcher built from field programmable gate arrays, and a pipelined arithmetic logic unit, the dispatcher controlling collective processing of data by the arithmetic logic unit.

Bernardo teaches a system for coordinating collective communication operations in message passing interface (MPI) standard in digital computer system(abstract).

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to implement the MPI standard as taught by Bernardo on the server computer of Burianek because MPI is a standard for communication between two nodes.

A person with ordinary skill in the art would have been motivated to make the modification to Burianek because having the server computer in MPI standard would provide a wider and easier network communication between network nodes.

9. Referring to claim 13, Burianek as modified teaches the invention as described in claim 12, although Burianek does not teach wherein in the collective operation is a MPI collective operation. However, MPI collective operation is a standard operation, therefore it would be obvious for a person with ordinary skill in the art to use any standard on the system taught by Burianek.

10. Referring to claim 14, Burianek as modified teaches the method of claim 12, further comprising: receiving and storing, at a payload memory (database 210, figure 2), the data from the at least some processing nodes of the multiple processing nodes, wherein said payload memory is a component of the dedicated collective offload engine (Col 5 lines 58-63); and retrieving and performing, at an arithmetic logic unit (ALU) (information server 225), the collective processing of data stored in the payload memory (database 210, figure 2), wherein said ALU is a component of the dedicated collective offload engine and is coupled to the payload memory (Col 6 lines 4-27).

11. Referring to claim 15, Burianek as modified teaches the method of claim 14, further comprising: controlling the collective processing of the data from the at least some processing nodes of the multiple processing nodes, wherein said controlling is performed by a dispatcher (delegation component 220) of the dedicated collective offload engine (server 215) coupled to the ALU (information server 225), and in communication with the at least some processing nodes of the multiple processing nodes (client 235, 240, 245)

via the switch fabric; and controlling, by the dispatcher, the sharing of the result with the at least one processing node of the multiple processing nodes (Col 5 lines 49-52).

12. Referring to claim 16, Burianek as modified teaches the method of claim 15, further comprising: storing, in at least one task table (assignment table 810) coupled to the dispatcher (delegation component 220), task identification information (task ID 815) related to the at least some processing nodes of the multiple processing nodes, wherein said at least one task table is a component of the dedicated collective offload engine (Col 9 lines 15-19); and storing, in at least one synchronization group table coupled to the dispatcher, identification information related to one or more groups of the at least some processing nodes of the multiple processing nodes, wherein said at least one synchronization group table is a component of the dedicated collective offload engine (Col 9 lines 19-24).
13. Referring to claim 17, Burianek as modified teaches the method of claim 15, further comprising: communicating, via an adapter, across the switch fabric using a link protocol, wherein said adapter is coupled to the switch fabric and is a component of the dedicated collective offload engine; and facilitating, by interface logic, communication between said adapter and said payload memory and between said adapter and said dispatcher, wherein said interface logic is a component of the dedicated collective offload engine (figure 1, inherent features for connection communication devices).
14. Referring to claim 18, 19, Burianek as modified teaches the invention as described in claim 12, and Burianek does not teach a plurality of collective offload engines in communication with one another to facilitate the collective processing of data. However,

it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have multiple servers as server 215 in figure 2, in order to accomplish load balancing for process requests from clients 235, 240, 245. And communication among serves using switch fabric or direct connections are known in the art.

A person with ordinary skill in the art would have been motivated to make the modification to Burianek because having multiple offload engines in communication with one another would have reduce and avoid heavy loads of request in one offload engine.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Liangche A. Wang whose telephone number is (571)272-3992. The examiner can normally be reached on Monday thru Friday, 8:30 am to 5:00 pm.

16. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571)272-4001. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

17. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Liang-che Alex Wang
November 13, 2008

/Liangche A. Wang/
Primary Examiner, Art Unit 2453